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Medicine

Socio-Demographic Pattern of Patients Suffering from Extra Pulmonary Tuberculosis

Dr. Imtiaz Ahmed[1*], Dr. Sadia Sabah[2], Dr. Mohammad Abdus Sattar Sarker[3], Dr. Mohammed Mostanshir Billah[4], Dr. Md. Tariq Hasan[5], Dr. ABM Abdullah[6]

[1]Assistant Professor, Dept of Medicine, Sir Salimullah Medical College & Mitford Hospital, Dhaka, Bangladesh
[2]Medical Officer, Dept. of Internal Medicine, Bangabandhu Sheikh Mujib Medical University Hospital, Dhaka, Bangladesh
[3]Associate professor, Dept. of Medicine, Sir Salimullah Medical College and Mitford Hospital, Dhaka, Bangladesh
[4]Medical Officer, OSD, DGHS, Mohakhali, Dhaka,Bangladesh.
[5]MD Resident, Phase-B, Dept. of Oncology, Bangabandhu Sheikh Mujib Medical University Hospital, Dhaka, Bangladesh
[6]Professor, UGC, Bangabandhu Sheikh Mujib Medical University Hospital, Dhaka, Bangladesh

Abstract		Original Research Article

Objective: In this study our main goal is to evaluate the demographic pattern of patients suffering from extra pulmonary tuberculosis. ***Method:*** This cross-sectional descriptive type study was carried out at Medicine departments of Sir Salimullah Medical College & Mitford Hospital, Dhaka from 19th December 2016 to 18th June 2017. A total 100 patients were included in the study where detailed history was taken then thorough clinical examinations. ***Results:*** More than fifty percent (56.0%) of the patients were in the age group 20-40 years and 30.0% of the patients were in age group 20 and below while only 14.0% of the patients were in the age group above 40 years. Also, male and female ratio of the patients was almost equal. Majority of the patient's had the history of contact with TB patients. Majority of the patient's had normal chest x-ray findings (60.0%) while 26.0% of the patient's had homogenous opacity in chest x-ray findings and 2.0% and 4.0% of the patient's had cavity lesion and fibrosis respectively, in chest x-ray findings. ***Conclusion:*** Our study concludes that majority of the tuberculosis patients are within the economically productive age group ranged between 20-40 years. Females are the majority of the patients with extra pulmonary tuberculosis. Based on this results TB control programme might usefully target young and female populations for early diagnosis to decrease tuberculosis morbidity and mortality.
Keywords: Demographic pattern, tuberculosis (TB), extra pulmonary tuberculosis.

INTRODUCTION

Tuberculosis is a common disease throughout the world, especially in developing countries. Millions of people have died from tuberculosis (TB), a leading chronic infectious killer of all age groups and the second most common infectious disease worldwide. It is an infection with human strains of Mycobacterium tuberculosis with the occurrence of the characteristic immune response. [1-2]The most common form of the disease, which is essential for the spread of TB, is pulmonary tuberculosis (PTB). Tuberculosis can affect any organ in the body. The Extra-pulmonary tuberculosis (EPTB) is referred to isolated TB at any site in the body outside the lungs.

Bangladesh is a country with high tuberculosis burden. As a low middle-income country, facilities for diagnosis of extra-pulmonary tuberculosis i.e. detection of M. Tuberculosis by microbiological, culture and histopathological methods is only available in advanced hospital that lacks in number. In this study our main goal is to evaluate the demographic pattern of patients suffering from extra pulmonary tuberculosis.

OBJECTIVE

General objective

- To assess the demographic pattern of patients suffering from extra pulmonary tuberculosis.

Specific objective

- To detect nutritional status of patients.
- To evaluate the Chest x-ray findings of patients.

METHODOLOGY

Study type

- This was a cross-sectional descriptive type study.

Place of the study and period of the study

- The study was carried out at Medicine departments of Sir Salimullah Medical College & Mitford Hospital, Dhaka from 19th December 2016 to 18th June 2017.

Study population and sample size

- A total 100 patients included in the study, from Medicine departments of Sir Salimullah Medical College & Mitford Hospital, hospitalized for investigation for pyrexia of unknown origin and clinically suspected TB patients. Adenosine deaminase level was measured during diagnosis of PUO.

Sampling method

- Sample of the study was selected by purposive method.

Inclusion criteria

- Patients age more than 12 years.
- Patients with pyrexia of unknown origin (PUO) whom were suspected for extra-pulmonary tuberculosis.
- Diagnosed case of extra-pulmonary tuberculosis.
- Given informed written consent.

Procedure of data collection

- Detailed history was taken then thorough clinical examinations were done. In all patient serum ADA, tuberculin skin test and other test on the basis of site of involvement such as for pulmonary sputum for AFB, CXR, Histopathological examination (FNAC/Biopsy), X-ray Spine, Bone, Joints, Cytological examination of effusions, ascitis, CSF, CT scan/MRI of brain (with contrast if needed), molecular test e.g. Gene Xpert was done. All these data were collected by using preformed data sheet.

DATA ANALYSIS

Data entry, quality control and data cleaning had been done following standard method. All data forms and questionnaires had been checked for errors and necessary correction had been made before data entry. Data had been entered using data entry program with built in range and consistency checks (SPSS). The prevalence rate had been determined by simple percentages. Chi-square test was used to assess comparison between different groups. A p-value <0.05 was considered statistically significant.

RESULTS

In table-1 shows distribution of the patients according to age and gender where more than fifty percent (56.0%) of the patients were in the age group 20-40 years and 30.0% of the patients were in age group 20 and below while only 14.0% of the patients were in the age group above 40 years. Also, male and female ratio of the patients was almost equal. The following table is given below in detail:

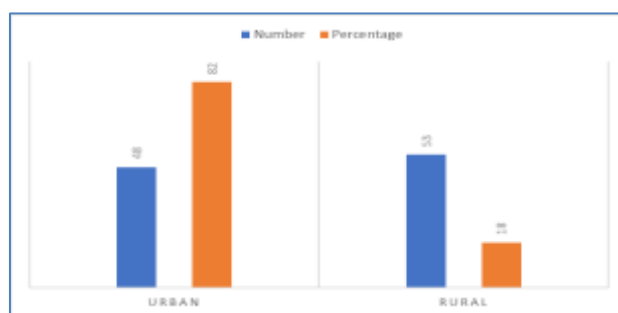**Table-1: Distribution of the patients according to age and gender**

Age group, years	%
20 and below	30%
20-40 years	56%
above 40 years	14%
Gender	%
Male	48%
Female	52%

In table-2 shows distribution of respondents by occupation. More than one fourth of the respondents were housewife (28.0%) and 24.0% of the respondents were students and day laborer while 14.0% of the respondents were employee. The following table is given below in detail:

Table-2: Distribution of respondents by occupation

Occupation	Number	Percentage
Housewife	28	28%
Students	24	24%
Day laborer	24	24%
Employee	14	14%
Businessman	6	6%
Unemployed	2	2%
Retired	2	2%

In figure-1 shows distribution of respondents by residence. Half of the respondents resided in the urban area and half were in the rural. The following figure is given below in detail:

Fig-1: Distribution of respondents by residence

In table-3 shows distribution of respondents by smoking history and alcohol consumption. About three fifths of the patients had history of smoking. One tenth of the patients had the history of alcohol consumption. The following table is given below in detail:

Table-3: Distribution of respondents by smoking history and alcohol consumption

Smoking history	Number	Percentage
Yes	38	38.0
No	62	62.0
Alcohol consumption	**Number**	**Percentage**
Yes	12	12.0
No	88	88.0

In table-4 shows distribution of respondents by nutritional status. Majority of the patient's nutritional status were average and 28.0% of the patient's nutritional status were poor. The following table is given below in detail:
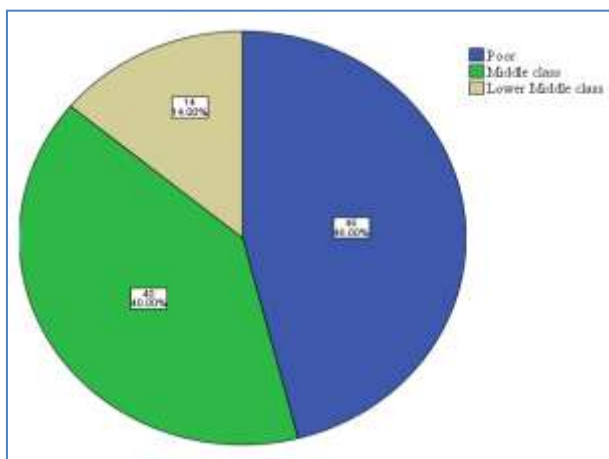
Table-4: Distribution of respondents by nutritional status

Nutritional status	Number	Percentage
Poor	28	28.0
Average	60	60.0
Good	12	12.0
Total	100	100.0

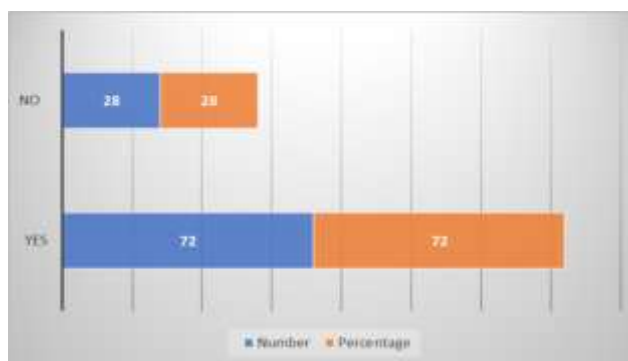In figure-2 shows distribution of respondents by Socio-economic condition. Two fifths of the patient's socio-economic conditions were middle class while 46.0% of the patient's socio-economic conditions were poor and very few were lower middle class. The following figure is given below in detail:

Fig-2: Distribution of respondents by socio-economic condition

In figure-3 shows distribution of respondents by history of contact with TB patients. Majority of the patient's had the history of contact with TB patients. The following figure is given below in detail:

Fig-3: Distribution of respondent by of contact with TB patients

In table-5 shows distribution of respondents by routine blood analysis where WBC average in respondents was 13210.2±3590.4, Neutrophil average count was 55.7±12.7 and Platelet count average was 282300±104468. The following table is given below in detail:

Table-5: Distribution of respondents by routine blood analysis

Routine blood analysis	Number	Range	Average
Hb percentage	100	8.0-15.0	9.92±1.27
ESR	100	13	86.4±22.1
Total count of WBC	100	5500-25000	13210.2±3590.4
Neutrophil count	100	30-75	55.7±12.7
Lymphocyte count	100	18-65	39.4±12.7
Monocyte count	100	0-5	1.9±1.5
Basophil count	100	0-1	0.02±0.14
Eosinophil count	100	0-8	2.9±1.8
Platelet count	100	150000-60000	282300±104468

In table-6 shows distribution of respondents by Chest x-ray. Majority of the patient's had normal chest x-ray findings (60.0%) while 26.0% of the patient's had homogenous opacity in chest x-ray findings and 2.0% and 4.0% of the patient's had cavity lesion and fibrosis respectively, in chest x-ray findings.The following table is given below in detail:

Table-6: Distribution of respondent by Chest x-ray findings

Chest x-ray findings	Number	Percentage
Normal	60	60.0
Homogenous Opacity	26	26.0
Others	8	8.0
Fibrosis	4	4.0
Cavity lesion	2	2.0

In figure-4 shows distribution of respondent by Tuberculin test where majority of the patients had positive tuberculin test (56.0%). The following figure is given below in detail:
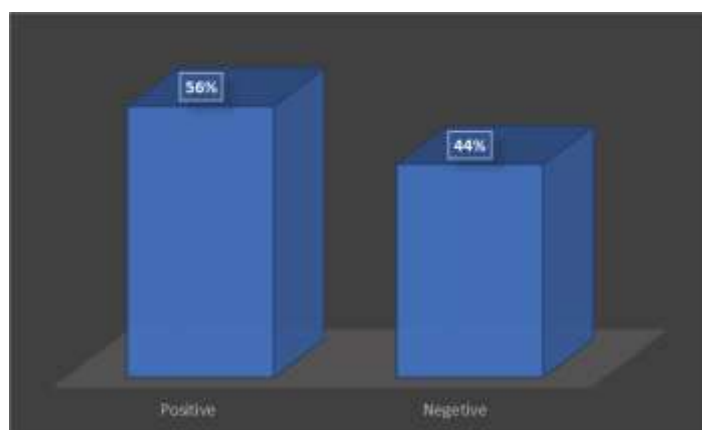
Fig-4: Distribution of respondents by Tuberculin test

DISCUSSION

More than fifty percent of the patients were in the age group 20-40 years and the mean (SD) age was 31.4 ± 15.2 years and Male and female ratio of the patients was almost equal. In another study similar result was found where the mean (SD) age was 29.2 ± 12.2 years [3]. This result was agreed with other report which was found that the mean age of tuberculous group was 33.9 ± 13.2 years that of malignant group was 45.5 ± 16.8 years [4].

A total of 300 pleural fluid samples were submitted to the laboratory for the diagnosis of TB over the 3-year study period of which 237 with available ADA results were included in one study. There were 197 tubercular pleural effusion patients: mean age 35 years with 107 females. Dissimilarities was found in a study with exudative pleural effusion where the study population included 164 males and 62 females, with a mean age of 48[5].

Majority of the patients had positive tuberculin test (57.1%) and we found similar findings in other studies where tuberculin skin tests were positive in 32/36 tuberculous pericarditis patients (89% 'true positive ') and 7/16 patients with non-tuberculous effusions[6].

CONCLUSION

Our study concludes that majority of the tuberculosis patients are within the economically productive age group ranged between 20-40 years. Females are the majority of the patients with extra pulmonary tuberculosis. Based on this results TB control programme might usefully target young and female populations for early diagnosis to decrease tuberculosis morbidity and mortality.

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